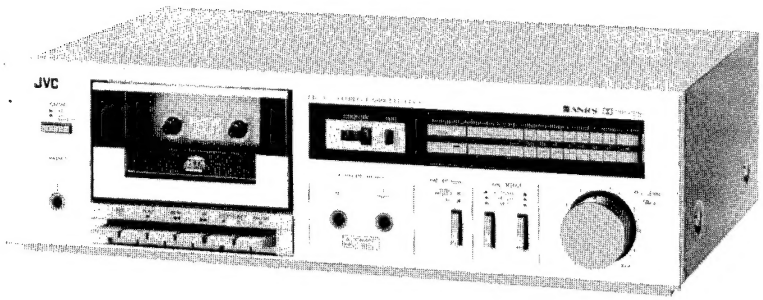
JVC

SERVICE MANUAL

MODEL

KD-D2A/B/C/E/J/U

STEREO CASSETTE DECK



No. 4199
April 1981

Contents

Specification

Type : Stereo cassette deck
Track system : 4-track, 2-channel
Tape speed : 1-7/8 inch/sec (4.8 cm/sec)
Frequency response : (0 dB recording)
Metal tape *1;
40 – 11,000 Hz (± 3 dB)
SA/Chrome tape *2;
40 – 8,000 Hz (± 3 dB)
SF/Normal tape *3;
40 – 8,000 Hz (± 3 dB)
(-20 dB recording)
Metal tape *1;
40 – 15,000 Hz (± 3 dB)
SA/Chrome tape *2;
40 – 15,000 Hz (± 3 dB)
SF/Normal tape *3;
40 – 14,000 Hz (± 3 dB)
Surpasses DIN 45 500.

Note: *1 ..... JVC ME or Equivalent
*2 ..... TDK SA or Equivalent
*3 ..... MAXELL UD or Equivalent

S/N ratio : 58 dB (S=1 kHz, K3=3%, N=A-Weight, Metal tape)
The S/N is improved by 5 dB at 1 kHz and by 10 dB above 5 kHz with ANRS/DOLBY B NR on.
Wow and flutter : 0.075 % (WRMS), 0.2 %(DIN 45 500)
Crosstalk : 65 dB (1 kHz)
Harmonic distortion : K3; 0.5%, THD; 1.0% (metal tape, 1 kHz 0 dB)
Bias : AC bias
Erasure : AC erasure
Heads : METAPERM head for recording/playback, 2-gap ferrite head for erasure
Motor : Electronic governed DC motor
Fast forward time : 100 sec. with C-60 cassette
Rewind time : 100 sec. with C-60 cassette
Semiconductors : 6 ICs, 14 transistors, 6 diodes, 16 LEDs

Input terminals
Mic jack x 2 : Max. sensitivity; 0.2 mV (–72 dBs)
Matching impedance; 600 Ω – 10 kΩ
Input jack x 2 : Min. input level; 80 mV (–20 dBs)
Input impedance; 100 kΩ
Output terminals
Output jack x 2 : Output level; 300 mV
Output impedance; 5 kΩ
Phones jack x 1 : Output level; 0.3 mW (8 Ω)
Matching impedance; 8 Ω – 1 kΩ
DIN socket : Min. input level; 0.1 mV/kΩ
Input impedance; 10 kΩ
Output level; 300 mV
Output impedance; 5 kΩ
Matching impedance; 50 kΩ or more
Power requirement : AC 240 V 50 Hz(KD-D2A)
AC 240/220/120 V, 50/60 Hz (KD-D2B/C/E/J)
AC 240/220/120/100 V 50/60 Hz (KD-D2U)
Power consumption : With power on 10 W
With power switch off 0.8 W
Dimensions : 16-1/2" (420 mm) W
4-3/4" (120 mm)H
10-3/8" (265 mm) D
Weight : 8.4 lbs (3.8 kg)
Accessories : Pin cord (KD-D2A/C/J/U) 2
Din cord (KD-D2B/E) 1
Head cleaning stick ... 2

Design and specifications are subject to change without notice.

Features

- ANRS/Dolby* B NR greatly reduces tape hiss noise.
- METAPERM record/playback head and 2-gap ferrite erase head compatible with all types of tapes including the new Metal tape.
- 2-color LED peak level indicator
- Full auto-stop mechanism
- Geared and oil-damped cassette door
- Automatic input selector

* Dolby and Dolbyized are trademarks of Dolby Laboratories.

Controls and Connections

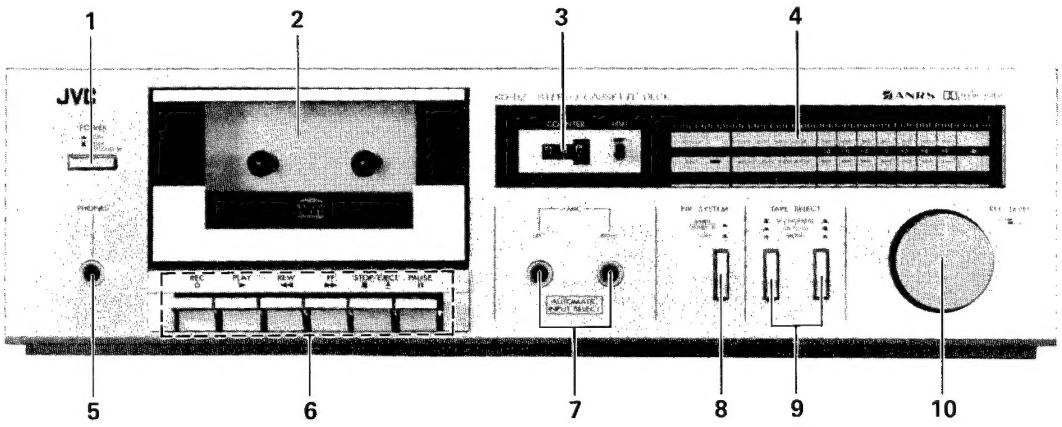


Fig. 1

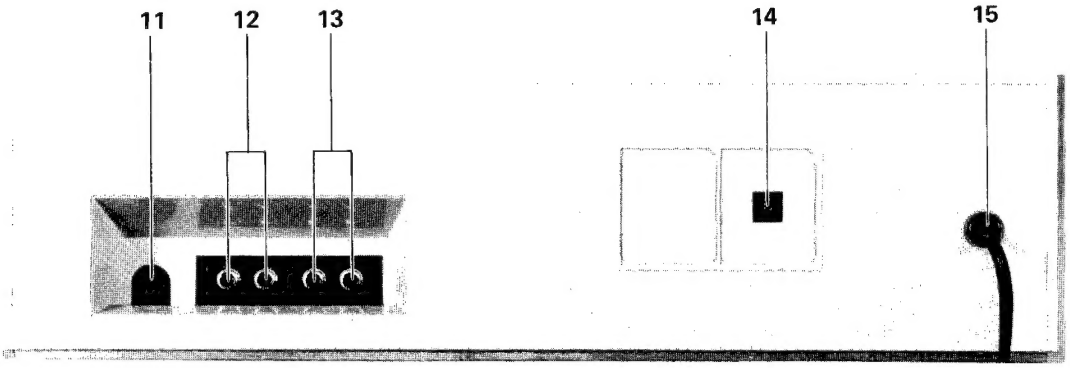


Fig. 2

1. **POWER switch**
2. **Cassette door**
3. **Tape counter/Counter reset button**
4. **PEAK LEVEL indicators**
5. **PHONES jack**
6. **Cassette operation buttons**
   - ○ REC (Record) button
   - ▶ PLAY button
   - ◀◀ REW (Rewind) button
   - ▶▶ FF (Fast Forward) button
   - ■ STOP/⏏ EJECT button
   - ⏸ PAUSE button
7. **MIC (Microphone) jacks**
8. **NR SYSTEM switch** (OFF – $\frac{\text{ANRS}}{\text{Dolby B}}$)
9. **TAPE SELECT switches**
   ($\frac{\text{SF}}{\text{NORM}}$ – $\frac{\text{SA}}{\text{CrO}_2}$ – METAL)
10. **REC LEVEL controls**
    ($\begin{matrix}\text{Forward knob} & – & \text{Left channel} \\ \text{Rearward knob} & – & \text{Right channel}\end{matrix}$)
11. **REC/PLAY (DIN) socket**
12. **LINE IN (REC) terminals**
13. **LINE OUT (PLAY) terminals**
14. **Voltage select switch**
15. **Power cord**

Main Parts Location

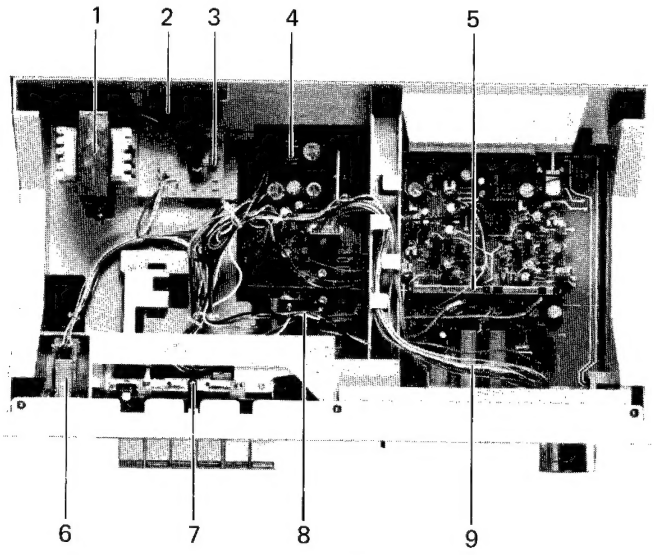


Fig. 3

1. Power transformer
2. Voltage select switch
3. Power supply P.W.B. ass'y
4. Main P.W.B. ass'y
5. Recording/playback switch
6. Power switch
7. Mechanical assembly
8. Motor
9. Select switches

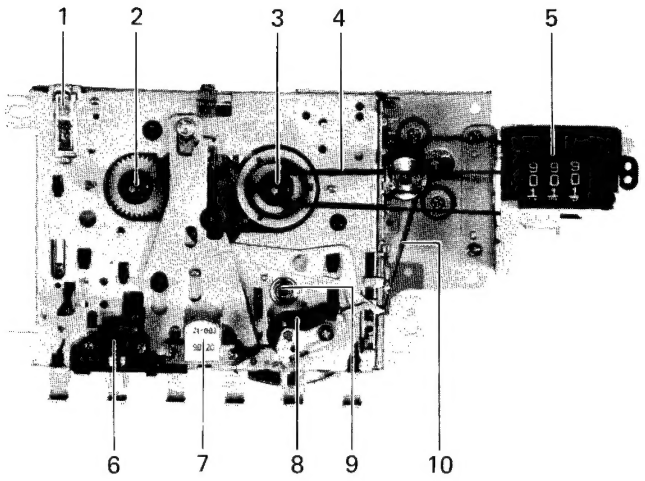


Fig. 4

(Mechanical parts)

1. Recording lever
2. Supply reel disk
3. Take up reel disk
4. Counter belt
5. Tape counter
6. Erase head
7. REC/PB head
8. Pinch roller arm ass'y
9. Capstan shaft
10. Capstan belt

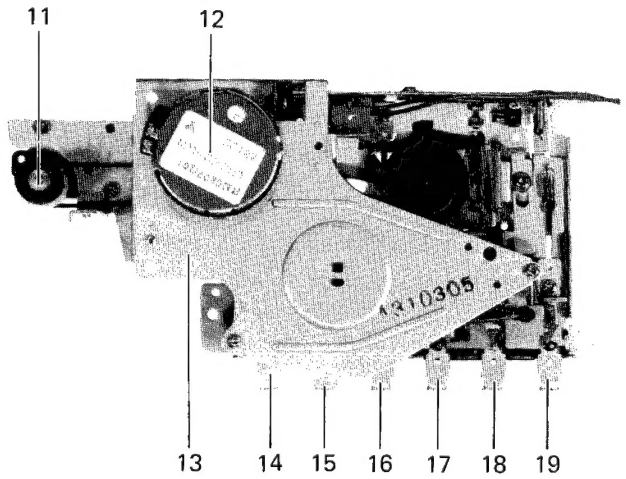


Fig. 5

11. Tape counter pulley
12. Motor
13. Motor & Flywheel bracket
14. Pause bar ass'y
15. Stop/eject bar ass'y
16. FF bar ass'y
17. REW bar ass'y
18. Play bar ass'y
19. Rec bar ass'y

Removal of the main parts

Observe care in handling the parts since the parts are small in size and the distance between them are short due to a deck design aimed mainly at compactness and high performance.

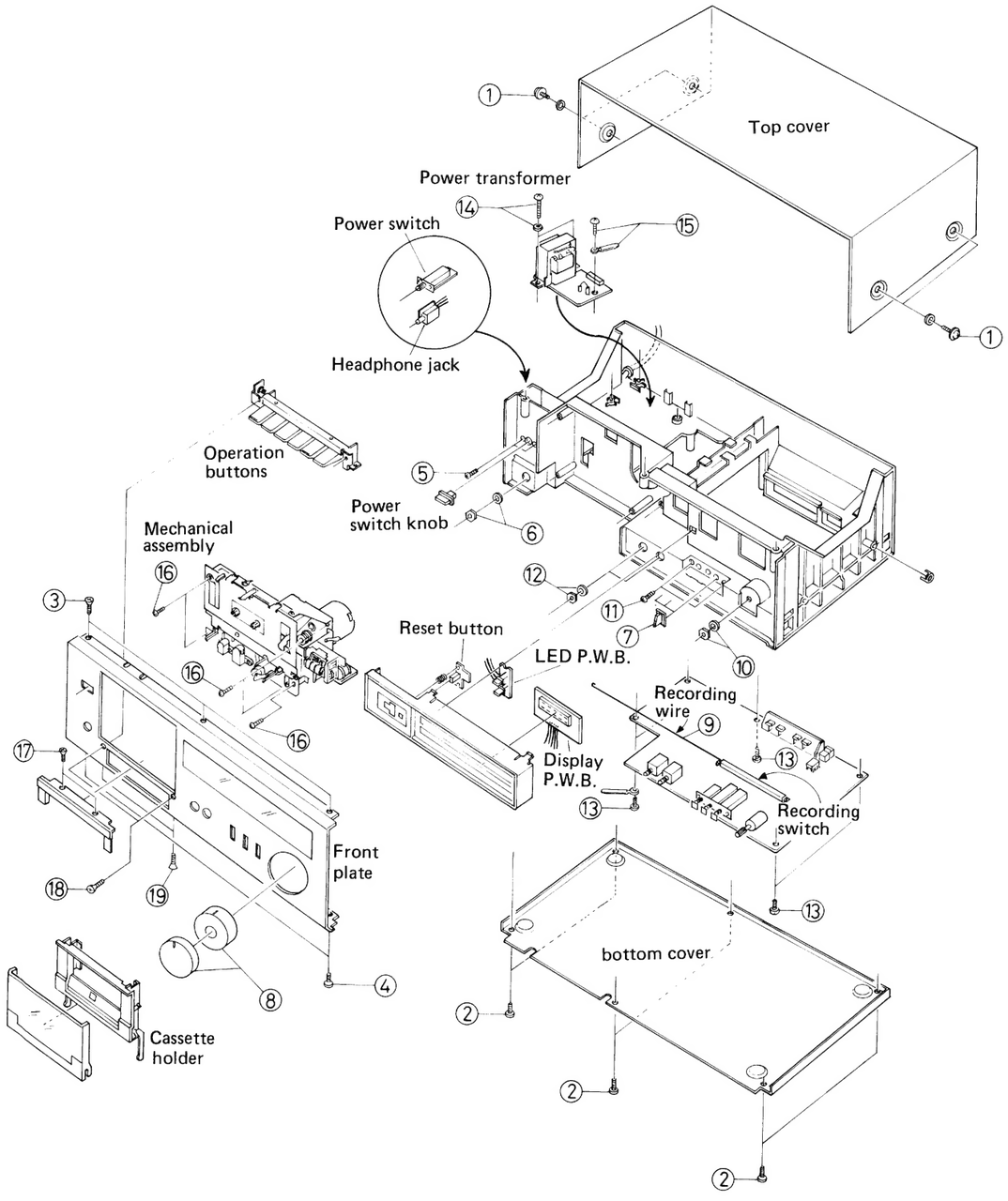


Fig. 6

ENCLOSURE ASSEMBLY PARTS

1. **Cassette door**
   Push the EJECT button to open the cassette door. Slide off the cassette door upwards to unlock its pawls off both sides.
2. **Top cover**
   Remove 4 screws (1) (left and right ... 2 screws on each).
3. **Bottom cover**
   Remove 6 screws (2).
4. **Front plate assembly**
   1) Remove 5 screws (3 screws (3) on upper side and 2 screws (4) on bottom side).
   2) Remove 3 screws fastening the button spring.

ELECTRICAL PARTS

When removing wire clamp (QHX2075-001), cut off it, and when clamping wires, use a new parts.

1. **Power switch P.W.B. ass'y**
   1) Pull off the power switch knob forward.
   2) Remove 2 screws (5) fastening the power switch.
2. **Headphone jack**
   Remove a nut and a washer (6) fastening the headphone jack.

[Steps **3–5** are after removing the escutcheon ass'y – remove 4 pawls –]

3. **Display P.W.B. ass'y (Multi-peak level indicators)**
   Remove 4 pawls holding the escutcheon.
4. **LED indicators P.W.B. (POWER, REC)**
   Remove 2 pawls holding the escutcheon.
5. **Counter reset button**
   Remove a pawl holding the reset button with the spring.
6. **Main amplifier P.W.B. ass'y**
   1) Pull off 3 select knobs (7) forward.
   2) Pull off REC LEVEL knobs (8) (R & L) forward.
   3) Remove the recording wire (9) from the recording switch.
   4) Remove a nut and a washer (10) fastening the recording level VR shaft.
   5) Remove 2 screws (11) fastening the select switches.
   6) Remove 2 nuts and 2 washers (12) fastening microphone jacks.
   7) Remove 5 screws (13) fastening the main amplifier P.W.B. ass'y.
7. **Power supply P.W.B. ass'y**
   1) Remove 2 screws and 2 washers (14) fastening the power transformer.
   2) Remove a screw and a wire clamp (15) fastening the power supply P.W.B.

MECHANICAL ASSEMBLY

Remove 5 screws (16) fastening the mechanical ass'y on the front side.

MECHA. OPERATION BUTTONS ASS'Y

1. Remove 2 screws (17) fastening the button escutcheon.
2. Remove 2 screws (18) fastening the button bracket on the front panel (front side).
3. Remove 2 screws (19) fastening the button bracket on the front panel (bottom side).

MECHANICAL PARTS (Fig. 9)

1. **REC/PB head**
   Remove a screw (1).
   Work loose a screw (2) for adjustment.
2. **Erase head**
   Remove a screw (3).
   Remove a screw (4) for adjustment.
3. **Pinch roller arm ass'y**
   Remove an E-ring (5) holding its assembly.
   Pull it off from the shaft.
4. **Holder plate (Fig. 7)**
   Remove 4 screws fastening the holder plate.

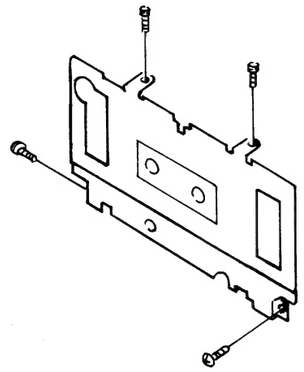


Fig. 7

5. **Supply reel disc ass'y**
   Pull out the reel disc stopper (6) and remove its disc from the shaft.
6. **Take-up reel disc**
   Pull out the reel disc stopper (7) and remove the counter belt, pull out its disc from the shaft.

Note: 1) Remove the reel disc stoppers with a piece of sheet metal inserted between the reel disc and stopper, when assembling the reel disc, the stopper needs a new parts (the stopper cannot be used again).
2) Be careful not to stain the counter belt.

7. Motor

1) Remove the main belt and RF belt.
2) Remove ② screws Ⓐ .
3) Slide off the motor in the direction of the arrow mark Ⓒ . (Screw Ⓑ is no removed)

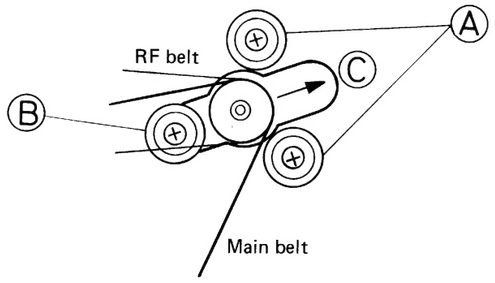


Fig. 8

2) Remove 3 screws and 3 rubbers fastening the motor.

8. Flywheel assembly

1) Remove 4 screws fastening the flywheel bracket (with the switch and counter assembly).
2) Remove the main belt.
3) Pull off the flywheel to rear side. (When replacing the flywheel, be sure to employ the washer for oil cutting.)

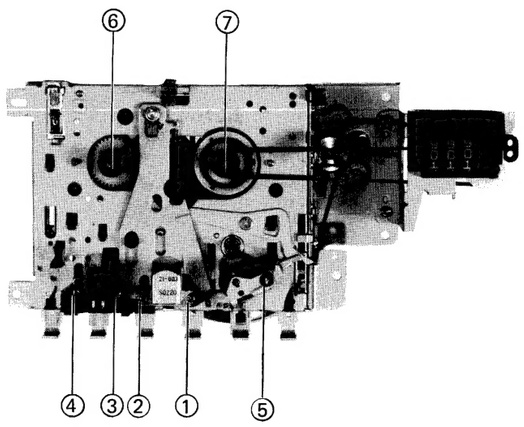


Fig. 9

Block Diagram

Recording System

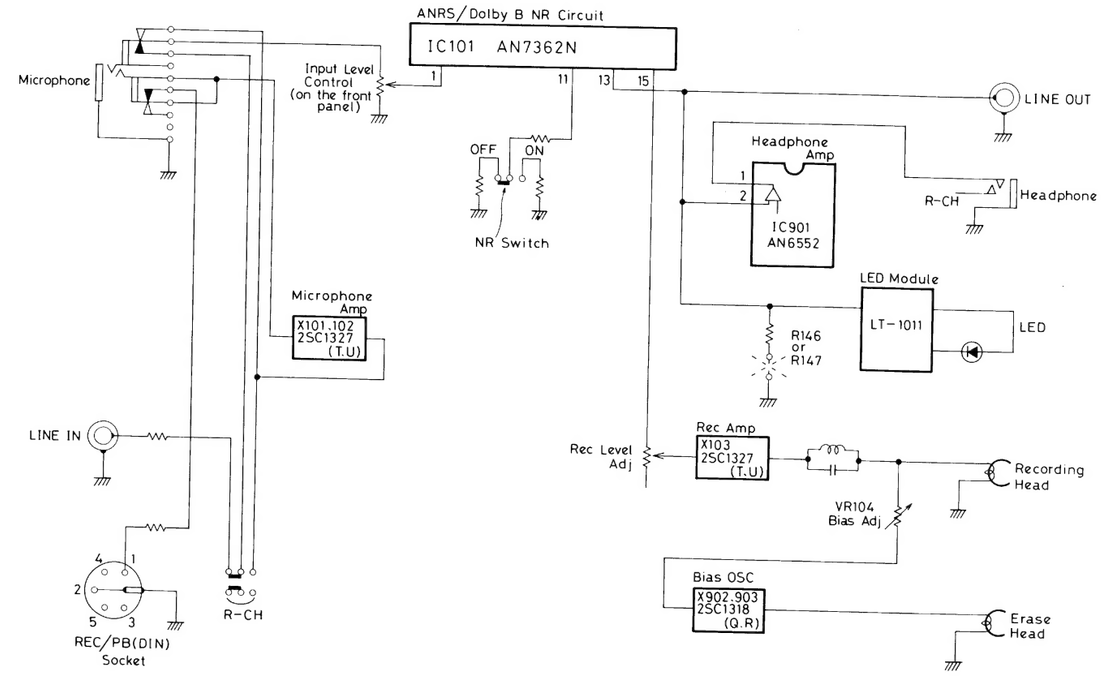


Fig. 10

Playback System

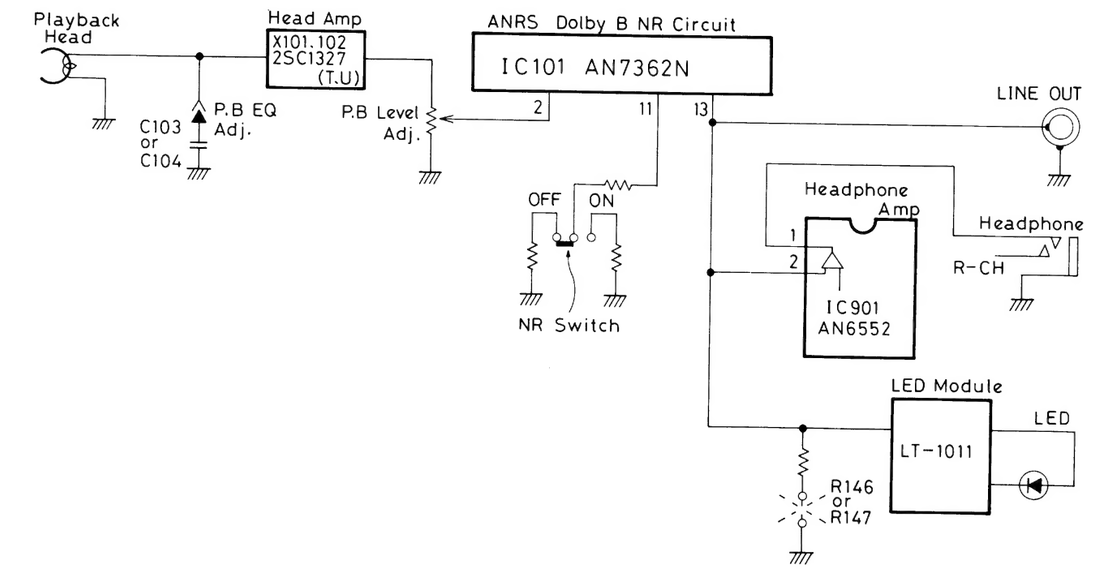


Fig. 11

Wiring Connection

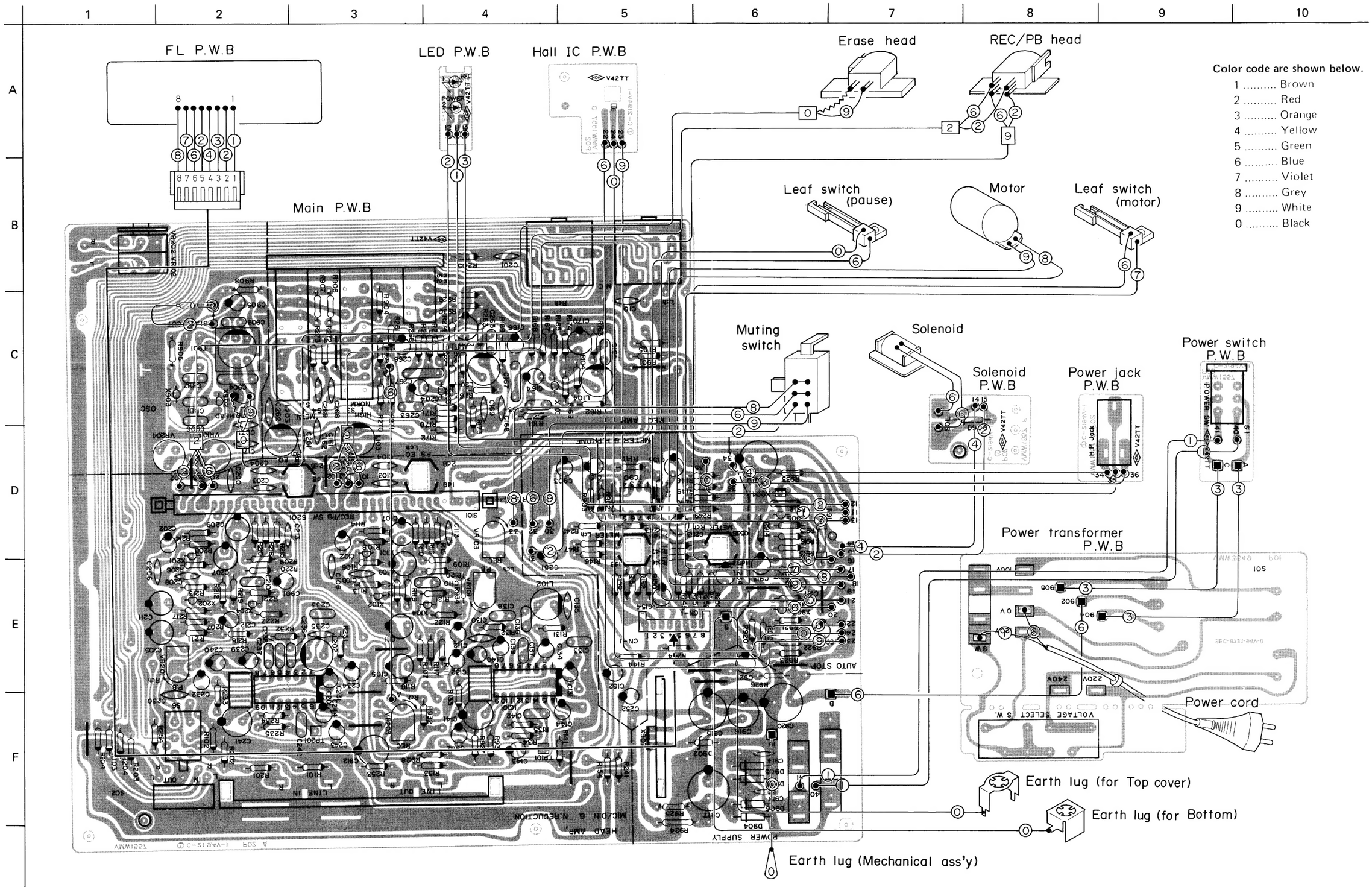
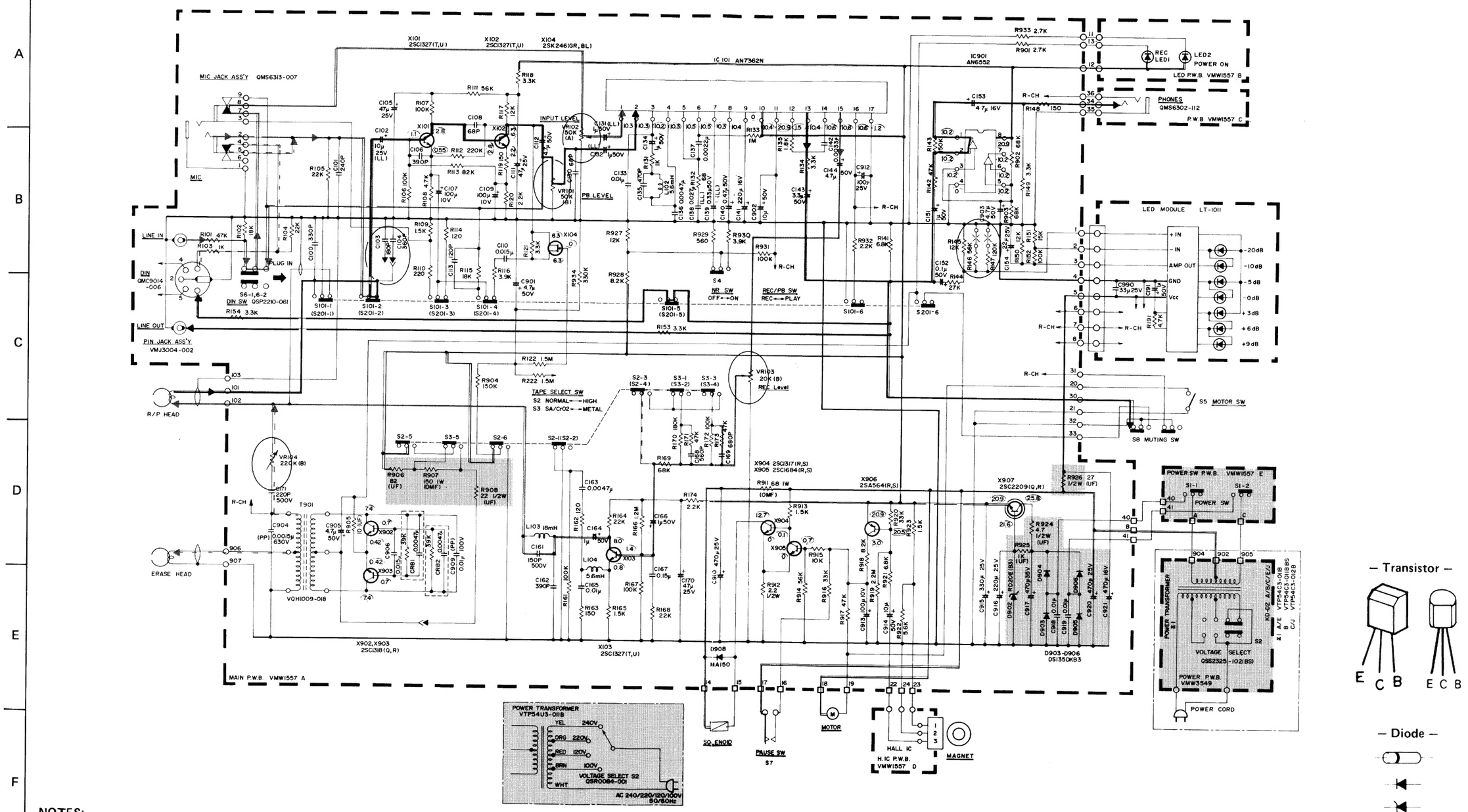


Fig.12

Standard Schematic Diagram of KD-D2



– Transistor –

– Diode –

NOTES:

All voltages are measured by E. Voltmeter, without input signal.
(Rec mode, tape select ..... metal, ANRS ..... OFF)

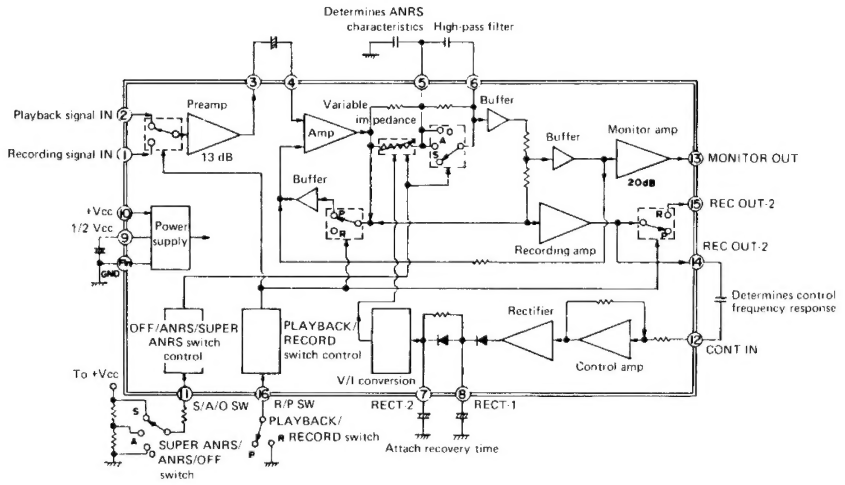
1. Unless otherwise specified, all resistors are 1/4 W, ± 5% carbon resistors.
   And all capacitors are 50 V fixed ceramic capacitors or 50 V Mylar capacitors.
2. UF – Unflammable carbon resistor
   MF – Metal film resistor
   OMF – Oxided metal film resistor
   Ta – Tantalum solid electrolytic capacitor
   LL – +20% low leak current electrolytic capacitor
   PP – Polypropylene capacitor
   PS – Polystyrene capacitor
   MM – Metallized mylar capacitor
   NP – Non-polarized electrolytic capacitor
   MP – Metallized polyester film capacitor
3. Blue line shows the signal at playback.
   Red line shows the signal at recording and +B circuits.
4. ▨ parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

Fig. 13

Integrant Circuit

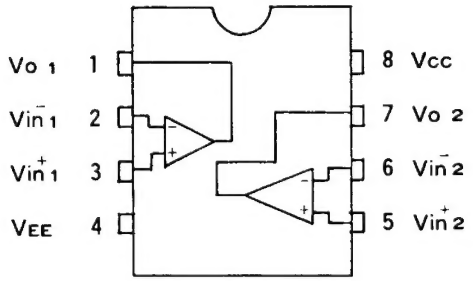
– AN7362 –

Block diagram



– AN6552 –

Top view



Equivalent circuit

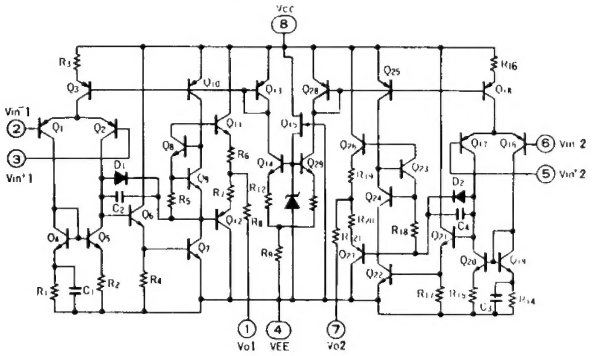


Fig. 14

Main Adjustments

[I] Equipment and measuring instruments used for adjustment

1. Electrical adjustment

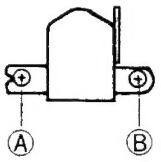
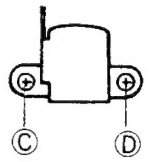
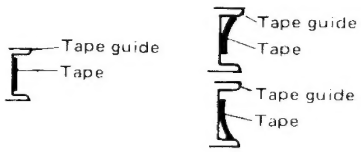
1) Electronic voltmeter
2) Audio frequency oscillator (range: 50 – 20 kHz and output 0 dB with impedance 600 Ω)
3) Attenuator
4) Standard tapes for REC/PB
   Maxell UD – SF tape . . . . . } – or equivalent
   TDK SA – SA tape . . . . . } – or equivalent
   SCOTCH METAFINE – Metal tape } – or equivalent
5) Reference tapes for playback (JVC Test Tape)
   VTT-658 (for head azimuth adj.)
   VTT-656 (for motor speed, wow flutter adj.)
   VTT-664 (for Reference level 1 kHz)
   VTT-675N (for playback frequency response)
6) Resistor 600 Ω (for attenuator matching)

2. Mechanical adjustment

1) Torque testing cassette gauge, CTG-N.
2) Blank tape (C-120) for tape running checker.

[II] Mechanical adjustment

(Adjust the mechanism or confirm that it is in normal operating condition prior to the adjustment of the electrical circuit.)

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting record/playback head position 	1. Connect an electronic voltmeter to the LINE OUT terminals. 2. Play back the VTT-658 test tape. 3. Adjust the head angle with the screw Ⓐ until the reading of the electronic voltmeter becomes maximum for both channels. 4. After adjusting, set the screw with screw bond.	Screw Ⓐ	Maximum	If the head is worn, disconnected or exceedingly magnetized so as not to provide the necessary characteristics, replace it with a new one. After replacement, the head position adjustment as well as the playback level adjustment, the bias current adjustment and the recording level adjustment are all necessary. If the output difference between the left and right channels exceeds 3 – 4 dB, the head is defective. Replace it with a new one.
Adjustment erase head height 	1. Turn the adjusting screw for aligning the erase head until it stops. Then, turn the screw in the reverse direction by 180° (a ½ revolution). 2. Employ a special cassette (C-120) from which parts of the casing, where the erase head, record/playback head and capstan engage, has been cut away. Perform tape transport with the cassette tape. Adjust the screw Ⓒ until the tape runs in the center of the erase head tape guide.	Screw Ⓒ		Be sure to perform this adjustment after replacing the erase head. Correct Incorrect 
Adjusting motor speed	Connect a speed meter (an electronic counter) to the LINE OUT terminals. Play back the VTT-656 test tape. Adjust the semi-fixed resistor in the motor until the reading of the speed meter is 3000 Hz.	Semi-fixed resistor in the motor	3000 Hz	If the speed meter functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter.
Checking playback torque	Employ a torque testing cassette tape for the checking, or remove the cassette cover and use a torque gauge.		40–70 gr-cm	If the standard torque is not obtained, replace the take-up disc assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		More than 80 gr-cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the idler circumference, the motor pulley, the take-up reel disc circumference, the flywheel circumference, etc. 2. Replace the belt and idler.
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 80 gr-cm	If the standard torque is not obtained, clean the capstan belt, idler, motor pulley, flywheel circumference, rewinding idler circumference, left reel disc circumference, etc.
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Play back the VTT-656 test tape. Check to see if the reading of the meter is within 0.15% (CCIR WTD)			If the reading becomes moving value even if conforming to the standard, a re-claim may be raised. Repairs are necessary.

[III] Electrical adjustments location

Main Amp. P.W.Board assembly

(Top view)

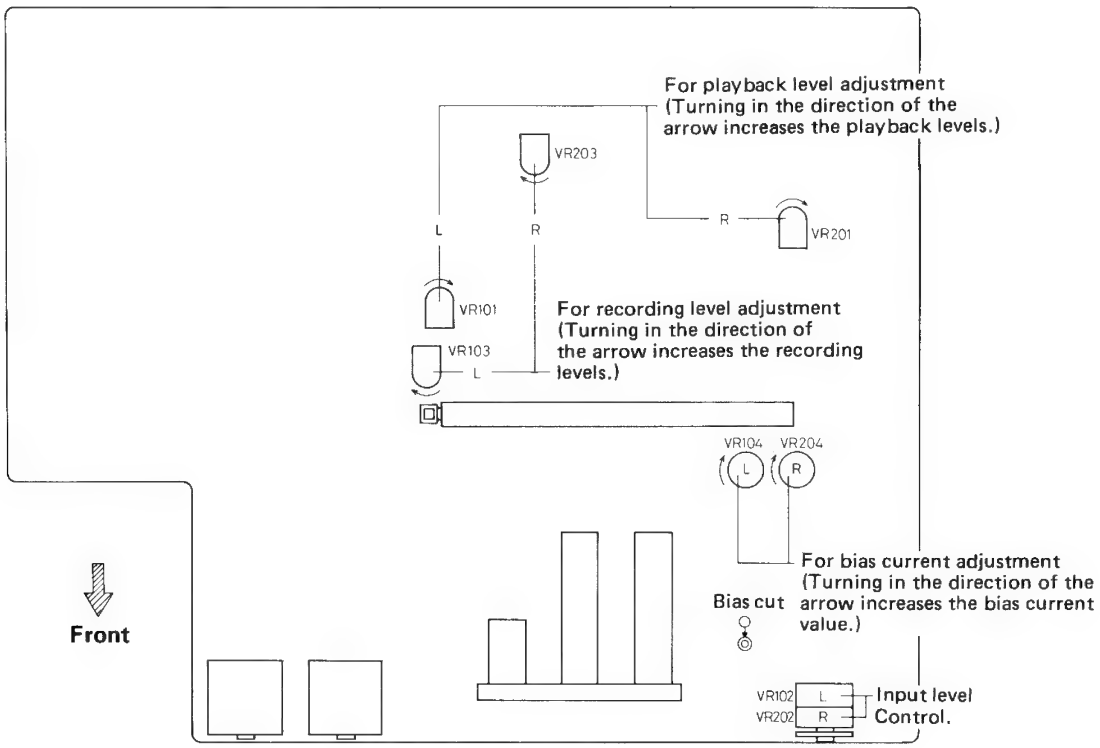


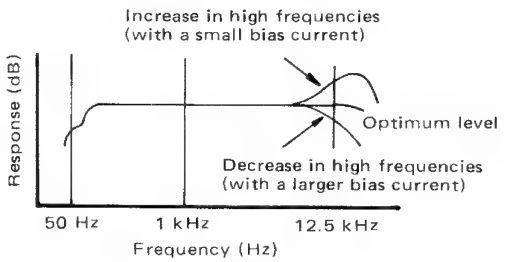
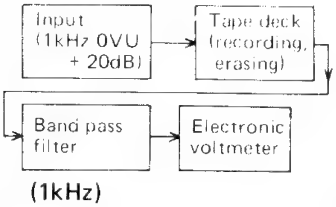
Fig. 15

[IV] Electrical circuit adjustment procedure

In the steps marked by an asterisk (*), adjustment should be performed, however, only checking is sufficient with steps other than those.

Adjustment should be performed in the order of steps 1, 2, 3, ... Perform this adjustment with the NR SYSTEM switch set to OFF.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
1*	Adjusting playback level	1. Play back the VTT-664 Reference tape (1 kHz) with the tape select switch set to the SF/NORM position. 2. Adjust VR101 and VR201 until the LINE OUT becomes about −8 dBs.	VR101, 201	−8 dBs (0.3 V)	This adjustment becomes necessary when a change in playback level results (for example, due to head replacement.
2*	Playback frequency response	Playback test tape VTT-675N (1 kHz, 10 kHz) for following adjustment. 1. Connect/Disconnect C103 or C104 so that 10 kHz signal and 1 kHz signal gains become flat response.		Reference frequency: 1 kHz 0 ± 2 dB at 10 kHz	NR SYSTEM: OFF TAPE SELECT: SF/NORM
3*	Peak level indicator	1. Set the cassette deck to its recording mode. 2. Apply a 1 kHz, approx. −10 dBs signal to the LINE IN terminals. 3. Adjust the recording level controls until the signal is available at -8 dBs at the LINE OUT terminals. 4. Connect/Disconnect R146 or R147 until the peak level indicator becomes 0 dB.		0 dB	Perform the adjustment when the parts are replaced.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
4*	Checking record/ playback frequency response	Record 1 kHz, 50 Hz and 12.5 kHz signals at an input level of 0 dB to −20 dB. Play back the tape. Check to see that the 50 Hz and 12.5 kHz signal output deviations fall within the standard range, using the 1 kHz signal output as a reference. 	For S/F NORM tape; VR104, 204	Reference frequency; 1 kHz 0 ± 3 dB at 50 Hz 0 ± 3 dB at 12.5 kHz	This checking should be performed for normal tapes and for both right and left channels. 1. Bias current adjustment for a cassette deck should generally be performed referring to the record/ playback frequency response. This is because the frequency response of a cassette deck depends more greatly upon the bias current than does that of an open reel deck. 2. If the bias current is not properly adjusted, the record and playback characteristics become as shown left.
5	Adjusting recording level	1. Apply a 1 kHz, approx. −10 dB signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at -8 dBs at the LINE OUT terminals. 2. After checking to see if the indicator become 0 record the signal applied to both left and right channels using normal tape. 3. Play back the recording part. Perform the recording signal adjustment with VR103 and VR203 so that the indicator becomes 0.	VR103, 203	0 dB	The level difference between left and right channels for SF/NORM tape and chrome tape should be less than 1 dB. Perform the adjustment using a normal tape, level difference between recording and playback for SA/CrO_2 and metal tapes, should be less than 1.5 dB, and that between left and right channels should also be less than 1 dB.
6	Checking record/ playback distortion	1. Record a 1 kHz, −8 dBs signal to LINE IN terminals and perform recording with the peak level indicator becomes to 0 dB. 2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		SF/NORM tape; Less than 2% SA/CrO_2 tape; Less than 3% Metal tape; Less than 2%	Be sure to perform this adjustment following bias current and recording level adjustment.
7	Checking signal to noise ratio in recording/ playback	1. Record a 1 kHz, 0 dB signal. Stop the input by disconnecting from the terminal to perform non-signal recording. 2. Play back the recorded part. Measure the 0 dB recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		SF/NORM, SA/CrO_2 and Metal tapes; More than 42 dB	Apply an output (−72 dBs) to the MIC terminals with the recording level controls set to maximum so that the peak level indicator becomes 0 dB.
8	Checking erasing coefficient	1. Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the peak level indicator becomes 0 dB. 2. Perform recording with the signal enhanced by 20 dB. 3. Erase a part of the recording. 4. Measure the output difference between the erased part and non-erased part to compare with an electronic voltmeter.		More than 65 dB	For the measuring, connect a band pass filter between the deck and the electronic voltmeter. 
9	Checking Auto stop	Hold less than 1 ± 0.5 mm gap to the magnet from the hall IC.			

Enclosure Assembly and Electrical Parts (Except P.W. Board Parts)

KD-D2A is no provided with voltage select switch.

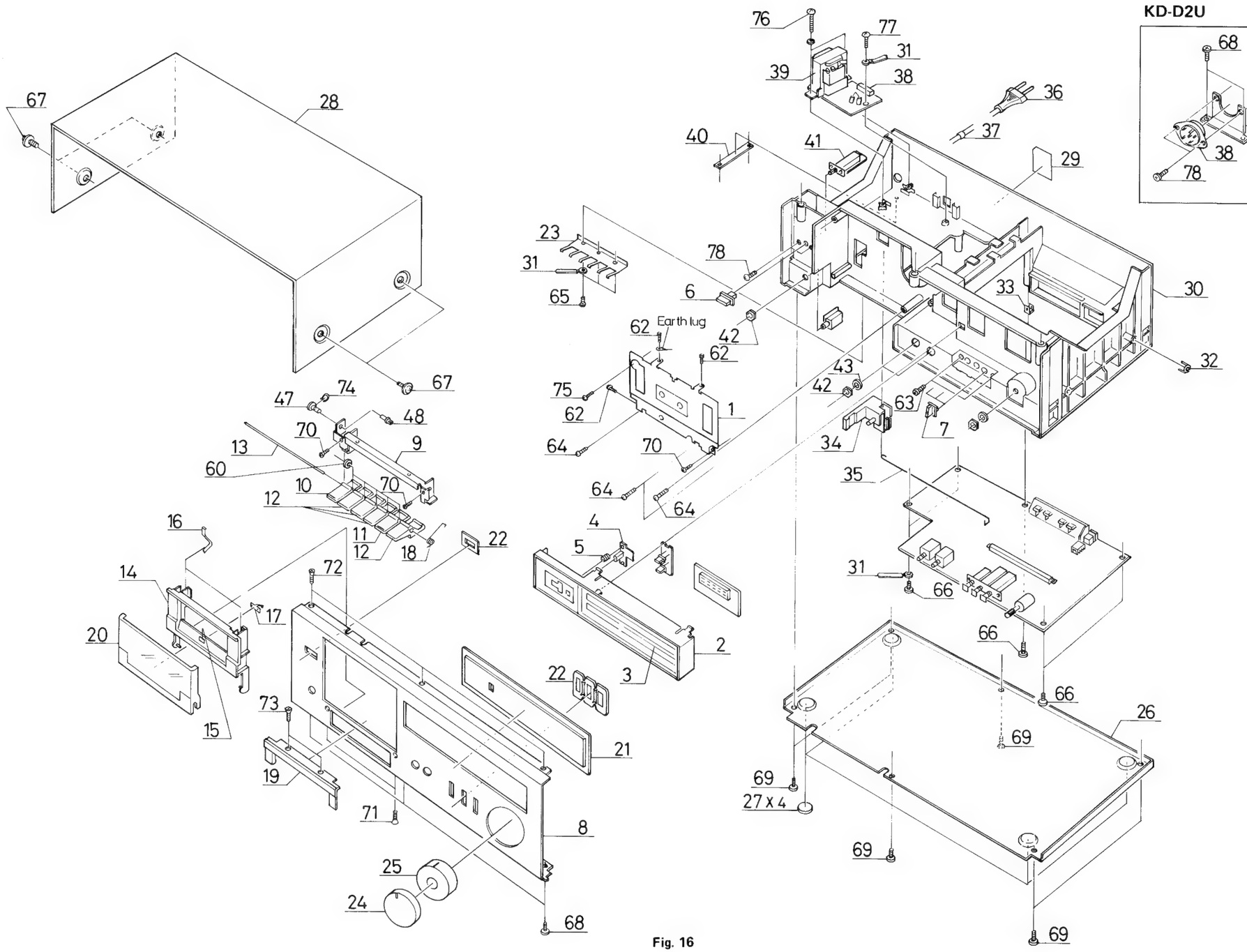


Fig. 16

Mechanical Component Parts

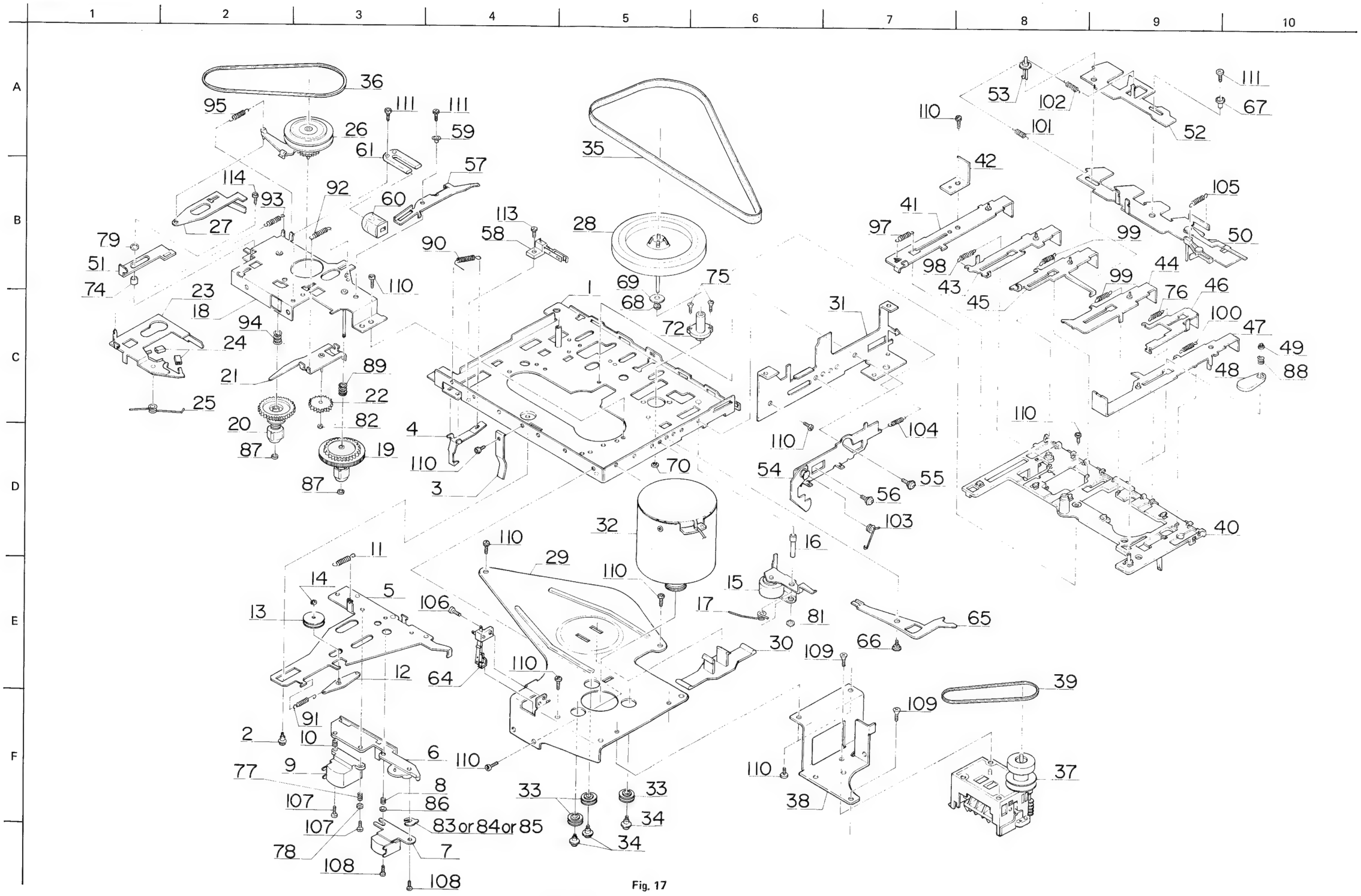


Fig. 17

No. 4199

Enclosure Assembly and Electrical Parts List

(Except P.W. Board Parts)

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VJD3276-001	Mecha. Plate		1
2	VJD2147-001	LED Holder		1
3	VJD4500-001	LED Plate		1
4	VXP4133-001	Push Button	Reset	1
5	VKW3001-065	Compression Spring		1
6	VXP4100-002	Push Button	Power	1
7	VXP4120-001	"	Function	3
(8,21,22)	ZCKDD2Y-CBF	Front Plate Ass'y		1
8	VJC1169-001	Front Plate		1
9	VKL3300-001	Button Bracket		1
10	VXP3066-001	Mecha. Button	Rec.	1
11	" -002	"	Stop	1
12	" -003	"		4
13	VKH4321-002	Button Shaft		1
(14–17)	ZCKDD2Y-CCA	Cassette Holder Ass'y		1
14	VJT2053-001	Cassette Holder		1
15	VJD4378-003	Mark		1
16	VKY4180-004	Spring		2
17	VKY4211-002	Cassette Spring		1
18	VKW4285-001	Holder Spring		1
19	VJD3277-001	Button Escutcheon		1
20	VJT3068-001	Cassette Lid		1
21	VJK3175-001	Finder		1
22	VJD4473-001	Escutcheon		1
23	VKY4222-001	Button Spring		1
24	VXL4151-001	Knob (L)	Input	1
25	VXL4150-001	" (R)		1
26	VJC2045-001	Bottom Cover		1
27	VJF4003-002	Foot		4
28	VJC1170-001	Top Cover		1
29	VYN2084-002PA	Name Plate	KD-D2A	1
	" -001PA	"	KD-D2B	1
	" -003PA	"	KD-D2C	1
	" -004PA	"	KD-D2E	1
	" -005PA	"	KD-D2J	1
	" -006PA	"	KD-D2U	1
30	VYH1122-001	Amp Chassis		1
31	VKZ4001-011	Wire Holder		2
32	VKY4202-001	Earth Lug	Top Cover	1
33	VKY4225-001	Earth Spring	Bottom	1
34	VKS3140-001	Rec. Arm		1
35	VKW4284-001	Rec. Spring		1
36	⚠QMP2560-200	Power Cord	KD-D2A	1
	⚠QMP9017-008BS	"	KD-D2B	1
	⚠QMP1200-200	"	KD-D2C/J	1
	⚠QMP3900-200	"	KD-D2E	1
	⚠QMP7600-200	"	KD-D2U	1
37	⚠QHS3876-252	Strain Relief	KD-D2A/E	1
	⚠ " -252BS	"	KD-D2B	1
	⚠QHS3056-252	"	KD-D2C/J/U	1
38	⚠QSS2325-102	Slide Switch	Voltage Selector KD-D2A/C/E/J	1
	" -102BS	"	" KD-D2B	1
	VTP54U3-011B	"	" KD-D2U	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
39	⚠VTP54C3-011B	Power Transformer	KD-D2A/E	1
	⚠ " -011BBS	"	KD-D2B	1
	⚠ " -012B	"	KD-D2C/J	1
	⚠VTP54U3-011B	"	KD-D2U	1
40	VKL4911-001	Transformer Bracket		1
41	⚠QSP0219-061	Push Switch	Power SW.	1
42	VKZ4150-001	Special Nut	Headphone & Mic.	3
44	T30483-00C	Slide Switch	Muting	1
45	VKL5015-001	SW. Bracket	KD-D2U	1
46	⚠QHX2075-001	Wire Clamp		4
47	VKH4322-001	Bearing		1
48	VYH4460-001	Gear		1
49	*VMA4129-001	Shield Plate		1
60	*Q03093-613	Washer		5
62	SDST2604Z	Screw	Mecha. Plate	4
63	LPSP3006VS	"	Switch	2
64	SBSF3010C	Tap. Screw	Mecha.	5
65	SBSF3010Z	"	Button Spring	3
66	SBSF3012V	"	Main P.W. Board	5
67	SDSB4014R	"	Top Cover	4
68	SDSF3010Z	"	Front Plate	2
69	SDSF3010Z	"	Foot	6
70	SSSP2604Z	Screw	Button Bracket	2
71	SSSP2606Z	Screw	"	4
72	SSSF3012Z	Tap. Screw	Front Plate	3
73	SSSP2606R	Screw	Button Escutcheon	2
74	RCSA12000	C. Ring	Cassette Holder	1
75	SDSF3010R	Tap. Screw	Mecha.	1
76	DPSP4020ZS	Screw	for Power Transformer	2
77	SBSF3010V	"	for P.W.B. (Power Supply)	1
78	LPSP2604Z	"	for Slide Switch	4

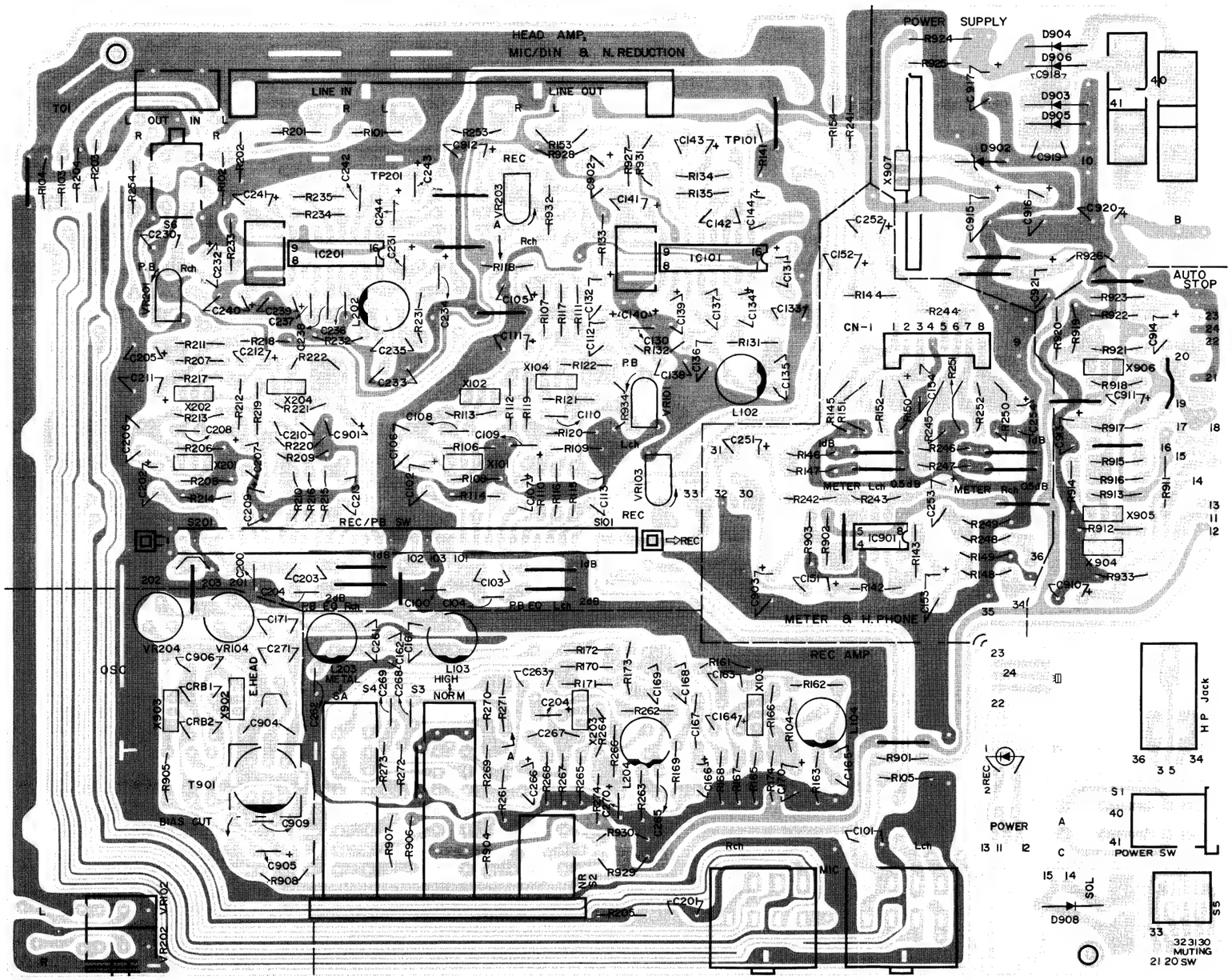
Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	170001101ZT	Mecha. Chassis Ass'y		1
2	17000310T	Head Panel Collar Screw		1
3	17000115T	Pack Spring		1
4	15100201T	Rec. Safety Lever		1
5	17000301T	Head Panel		1
6	17000306T	Head Base		1
7	VGH0421-003	R/P Head		1
8	9400312T	Head Spring	R/P Head	1
9	VGH0212-103	E. Head		1
10	9400312T	Head Spring	E. Head	1
11	17000307T	RC Spring	Play Button – Head Panel	1
12	17000312ZT	Take-up Roller Plate Ass'y		1
13	17000321ZT	Take-up Roller Ass'y		1
14	12001503T	Polyslider Washer	ϕ1.2, ϕ3, t 0.25	1
15	15100491ZT	Pinch Roller Ass'y		1
16	15100403T	Pinch Roller Arm Sleeve		1
17	17000402T	Pinch Roller Spring		1
18	17000581ZT	Reel Disk BKT Ass'y		1
19	17000592ZT	Take-up Reel Ass'y		1
20	17000593ZT	Supply Reel Ass'y		1
21	17000582ZT	F.F. Gear Plate Ass'y		1
22	17000516T	F.F. Gear		1
23	17000583ZT	Main Plate Ass'y		1
24	11991603T	Brake Shoe		2
25	17000514T	Brake Arm Spring		1
26	17000692ZT	RF. Clutch Ass'y		1
27	17000505T	Rew. SP Plate		1
28	17000705T	Flywheel Ass'y		1
29	17000703T	Flywheel Bracket		1
30	17100504T	Thrust Holder		1
31	17001120T	Eject Bracket		1
32	170010205ZT	Motor Ass'y	MMT-6B2HD ... Motor, 17001007T ... Motor Pulley ... Screw x 2	1 set
33	5880910T	Rubber Cushion		3
34	12001201T	Collar Screw (S)		3
35	17001009T	Main Belt		1
36	17001010T	RF. Belt		1
37	VKC5144-001T	Counter		1
38	17001303T	Counter Bracket		1
39	11431602T	Counter Belt		1
40	17000945T	Push Button Base		1
41	170009111ZT	Rec. Button Lever Ass'y		1
42	17000205T	Rec. Bracket		1
43	170009112ZT	Play Button Lever Ass'y		1
44	170009113ZT	FF Button Lever Ass'y		1
45	170009114ZT	Rew. Button Lever Ass'y		1
46	17000982T	Stop Button Lever		1
47	170009116ZT	Pause Button Lever Ass'y		1
48	12221702T	Pause Lever		1
49	17000935T	Pause Lever Stopper		1
50	170009115ZT	Lock Plate Ass'y		1
51	17000807T	SW. Lever Ass'y		1
52	170009319T	Timing Cam		1
53	17000920T	Lock Plate Boss		1
54	170011101ZT	Eject Slide Lever Ass'y		1
55	17001111T	Collar Screw		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
56	17000310T	Collar Screw		1
57	170009323T	Auto Kick Lever		1
58	MSW-1230-NB/C	SW Ass'y		1
59	17001202T	Auto Kick Lever Collar		1
60	17001506T	Coil		1
61	17001501T	Core		1
64	MSW1480T	SW. Ass'y	Pause	1
65	17001201T	Pause Arm Lever		1
66	17001202T	Collar Screw		1
67	17000808T	Collar		1
68	17000710T	Washer		1
69	11011106T	"		1
70	7131108T	"		1
71	MSW-1230-NBK	Switch		1
72	17000113T	FL Bloch		1
74	17000808T	Collar	for SW lever Ass'y	1
75	SSSP2004Z	Screw	for FL Bloch	2
76	170009331T	Spring	Stop Button Lever	1
77	VKW3001-086	Spring	E. Head	1
78	WSS2000N	Washer	"	1
79	WNS2600N	"	SW. Lever Ass'y	1
80	WSS2000N	"		1
81	17150401T	"	Pinch Roller	1
82	12001503T	"	ϕ1.2, ϕ3, t 0.25	1
83	13270412AT	U. Washer	Head Adjust	2
84	13270412BT	"	"	2
85	13270412CT	"	"	2
86	15601501T	Washer	R/P Head ϕ2.1, ϕ5, t 0.4	1
87	16100604T	"	ϕ1.6, ϕ3.8, t 0.3	2
88	13231701T	Spring	Pause Lever	1
89	13301303T	"	Take-up Back Tension ϕ1.6, ϕ3.8, t 0.3	1
90	17000201T	"	Rec. Safety Lever	1
91	17000308T	"	Head Panel – Take-up Roller	1
92	17000512T	"	FF Gear Plate	1
93	17000513T	"	Main Plate	1
94	17000518T	"	Supply Back Tension	1
95	17000605T	"	RF. Clutch Arm	1
96	VKW3001-036	"		1
97	13340213T	"	Rec.	1
98	170009330T	"	Play	1
99	17000933T	"	FF, Rew.	2
100	17000934T	"	Pause	1
101	170009322T	"	Main	1
102	170009320T	"	Timing	1
103	17001122T	"	Lock Lever	1
104	17001107T	"	Eject Slide Lever	1
105	17001611T	"	Auto Lever	1
106	SDSP2004Z	Screw	SW. Ass'y	1
107	SPSP2007Z	"	E. Head	2
108	SPSX2007Z	PM. Screw	R/P Head	2
109	SSSB2606Z	Screw	Counter	2
110	20PZ26040T	Tap. Screw	Pack Spring x 1, Reel Disk Bracket x 2, Eject Bracket x 1, Flywheel Bracket x 4, Counter Bracket x 2, Rec. Bracket x 1, Push Button Base x 1.	13
111	20PZ26060T	"	Core x 1, Auto Kick Lever Collar x 1, Collar x 1	3
112	SPSP2012Z	Screw		1
113	20PZ26050ZT	"	SW. Ass'y	1
114	20PZ26100ZT	"	SW. Lever Ass'y	1

P.W. Board Parts (Main amplifier)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
IC101 201	E. Voltmeter	10.3	10.3	10.2	10.3	10.5	10.5	10.3	10.4	0	10.4	20.9	1.5	10.4	10.6	10.6	10.6	1.2
	C. Tester	6.5	6.5	10.3	6.5	10.3	10.3	9.8	10.3	0	10.3	20.9	1.5	10.3	10.3	10.3	10.3	1.2
IC901	E. Voltmeter	10.2	10.2	10.2	0	10.2	10.2	10.2	20.9									
	C. Tester	10.2	10.2	9.0	0	9.0	10.2	10.2	20.9									



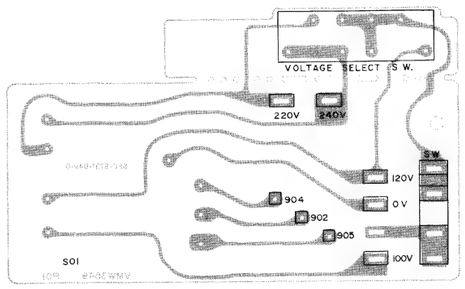
	E. Voltmeter			C. Tester		
	E	C	B	E	C	B
X101 201	0.55	2.8	1.1	0.5	2.4	0.75
X102 202	2.2	6.3	2.8	2.2	6.0	2.4
X103 203	0.8	8.0	1.4	0.57	7.2	0.8
X104 204	S 6.3	G 0	D 6.3	S 6.3	G 0	D 6.3
X902	0.42	7.4	0.7	0.43	7.4	0.65
X903	0.42	7.4	0.7	0.43	7.4	0.65
X904	0	12.7	0.1	0	12.7	0.1
X905	0	0.1	0.7	0	0.1	0.7
X906	20.9	3.0	20.5	20.9	2.3	20.5
X907	20.9	25.8	21.6	20.9	25.8	21.6

Voltage values are measured by the following meter without input signal at normal position at Recordeng mode.
E. Voltmeter = Electronic Voltmeter
C. Tester = =Circuit Tester (20 kΩ impedance)

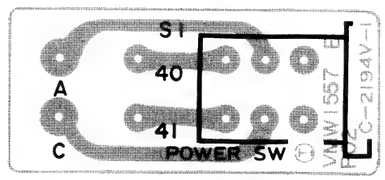
Fig. 18

Other P.W. Board Parts

— Power Transformer —

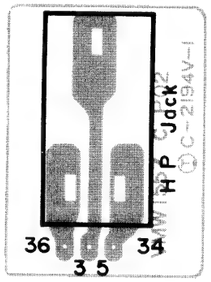


— Power Switch —



— LED —

— Headphone jack —



— Hall IC —

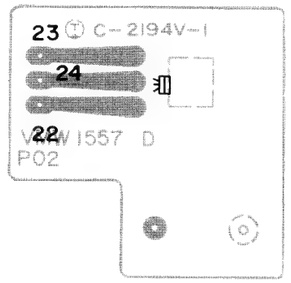


Fig. 19

Main P.W. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
		VMW1557-004	P.W. Board Ass'y		1
R102, 202, 115, 215		QRD141J-183S	C. Resistor	18 kΩ 1/4 W	4
R916, 920		" -333S	"	33 kΩ "	2
R103, 203, 131, 231		" -102S	"	1 kΩ "	4
R104, 204, 105, 205, 164, 264, 168, 268		" -223S	"	22 kΩ "	8
R106, 206		" -104S	"	100 kΩ "	2
R107, 207, 152, 252, 161, 261, 167, 267, 931, 172, 272		" -104S	"	100 kΩ "	11
R108, 208,		" -472S	"	4.7 kΩ "	2
R109, 209, 165, 265, 913, 923		" -152S	"	1.5 kΩ "	6
R110, 210		" -221S	"	220 Ω "	2
R111, 211, 146, 246, 914		" -563S	"	56 kΩ "	5
R170, 270		" -184S	"	180 kΩ "	2
R112, 212		" -224S	"	220 kΩ "	2
R114, 214, 162, 262		" -121S	"	120 Ω "	4
R144, 244		" -273S	"	27 kΩ "	2
R117, 217, 145, 245, 150, 250, 927		" -123S	"	12 kΩ "	7
R922		QRD141J-562S	"	5.6 kΩ 1/4 W	1
R118, 218, 134, 234, 121, 221, 149, 249, 153, 253, 154, 254		QRD141J-332S	C. Resistor	3.3 kΩ 1/4 W	10
R119, 219		" -151S	"	150 Ω "	2
R120, 220, 174, 274, 932		" -222S	"	2.2 kΩ "	5
R116, 216, 930		" -392S	"	3.9 kΩ "	3
R122, 222		QRD147J-155S	"	1.5 MΩ "	2
R132, 232		QRD141J-680S	"	68 Ω "	2
R133, 233		QRD147J-105S	"	1.5 MΩ "	2
R135, 235		QRD141J-182S	"	1.8 kΩ "	2
R141, 241, 921		" -682S	"	6.8 kΩ "	3
R142, 242, 917, 101, 201, 171, 271, 173, 273		" -473S	"	47 kΩ "	9
R143, 243		" -154S	"	150 kΩ "	2
R147, 247		" -124S	"	120 kΩ "	2
R148, 248, 163, 263		" -151S	"	150 Ω "	4
R151, 251		" -153S	"	15 kΩ "	2
R166, 266		" -125S	"	1.2 MΩ "	2
R113, 213		" -823S	"	82 kΩ "	2
R173, 273		" -473S	"	47 kΩ "	2
R901		QRD147J-272S	"	2.7 kΩ "	1
R902, 903, 169, 269		QRD141J-683S	"	68 kΩ "	4
R904		" -154S	"	150 Ω "	1
R905	⚠	QRD149J-100S	Fail Safety Resistor	10 Ω "	1
R906	⚠	" -820S	"	82 Ω "	1
R907	⚠	QRG016J-151	"	150 Ω "	1
R908	⚠	QRD126K-220	"	22 Ω "	1
R909, 910		QRD141J-393S	C. Resistor	39 kΩ "	2
R911	⚠	QRG019J-680	OMF Resistor	68 Ω 1 W	1
R912		QRD121J-2R2	C. Resistor	2.2 Ω ½ W	2
R915		QRD141J-103S	"	10 kΩ 1/4 W	1
R919		" -225S	"	2.2 MΩ "	1
R924	⚠	QRD129J-4R7	Fail Safety Resistor	4.7 Ω 1/2 W	1
R925	⚠	QRD149J-102S	"	1 kΩ 1/4 W	1
R926	⚠	QRD129J-270	"	27 Ω "	1
R928, 918		QRD141J-822S	C. Resistor	8.2 kΩ 1/4 W	2
R929		QRD147J-561S	"	560 Ω "	1
R933		" -272S	"	2.7 kΩ "	1
R934		" -334S	"	330 kΩ "	1
		QWY123-019	Bus Wire		25
CRB1, CRB2		EXR-P472M393W	C.R. Block		2
C100, 200		QCS11HJ-331	C. Capacitor	330 pF 50 V	2
C101, 201		" -241	"	240 pF "	2
C102, 202		QEB41EM-106M	E. Capacitor (Low Leak)	10 μF 25 V	2
C103, 203		QCS11HJ-181	C. Capacitor	180 pF 50 V	2
C104, 204		" -361	"	360 pF "	2
C105, 205, 111, 211, 170, 270		QET41ER-476N	E. Capacitor	47 μF 25 V	6
C106, 206, 162, 262		QCS11HJ-391	C. Capacitor	390 pF 50 V	4
C107, 207, 109, 209, 913		QET41AR-107N	E. Capacitor	100 μF 10 V	5
C108, 208, 130, 230		QCS11HJ-680	C. Capacitor	68 pF 50 V	4
C110, 210		QFM41HJ-153	M. Capacitor	0.015 μF "	2
C112, 212, 144, 244, 903, 905		QET41HR-475N	E. Capacitor	4.7 μF "	6
C113, 213		QCS11HJ-121	C. Capacitor	120 pF "	2
C131, 231, 132, 232		QEB41HM-105M	E. Capacitor (Low Leak)	1 μF "	4

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
C133, 233		QFM41HJ-103	M. Capacitor	0.01 μF "	2
C134, 234, 151, 251, 164, 264, 166, 266		QET41HR-105N	E. Capacitor	1 μF "	8
C135, 235		QCS11HJ-471	C. Capacitor	470 pF "	2
C136, 236, 163, 263		QFM41HJ-472	M.Capacitor	0.0047 μF "	4
C137, 237		" -222	"	0.0022 μF "	2
C138, 238		" -273	"	0.027 μF "	2
C139, 239		QEB41HM-334M	E. Capacitor (Low Leak)	0.33 μF "	2
C140, 240		" -475M	"	4.7 μF "	2
C141, 241		QET41CR-227N	E. Capacitor	220 μF 16 V	2
C142, 242		QFM41HJ-332	M. Capacitor	0.0033 μF 50 V	2
C143, 243		QET41HR-335N	E. Capacitor	3.3 μF "	2
C152, 252		" -104N	"	0.1 μF "	2
C153, 253, 921		QET41CR-476N	"	47 μF 16 V	3
C154, 254		QET41ER-226N	"	220 μF 25 V	2
C161, 261		QCS12HJ-151	C. Capacitor	150 pF 500 V	2
C167, 267		QFM41HJ-154	M. Capacitor	0.15 μF 50 V	2
C168, 268		QCS11HJ-561	C. Capacitor	560 pF "	2
C171, 271		QCY12HK-221	"	220 pF 500 V	2
C901		QET41HR-335N	E. Capacitor	3.3 μF 50 V	2
C902, 914		QET41HR-106N	E. Capacitor	10 μF "	2
C904		QFP82XJ-152	PP Capacitor	0.0015 μF	1
C906		QFM41HJ-153	M. Capacitor	0.015 μF 50 V	1
C909		QFP82AJ-103	PP Capacitor	0.01 μF	1
C910		QET41ER-477N	E.Capacitor	470 μF 25 V	1
C915	⚠	QET41ER-337N	"	330 μF "	1
C916		" -227N	"	220 μF "	1
C917	⚠	QET41VR-477N	"	470 μF 35 V	1
C918, 919		QCF11HP-103	"	0.01 μF 500 V	2
C920	⚠	QET41ER-477N	"	470 μF 25 V	1
VR101, 201		QVP8A0B-054	V. Resistor	50 kΩ Playback Level	2
VR102, 202		QVL5A3A-054F	"	50 kΩ Input	1
VR103, 203		QVP8A0B-024	V. Resistor	20 kΩ REC Level	2
VR104, 204		QVP4A0B-224	"	220 kΩ Bias	2
		TAZ336499-04	Volume Lug	Input	1
L102, 202, 104, 204		VQP0001-562	Inductor		4
L103, 203		" -183	"		2
		QMV5005-008	Connector		1
T901		VQH1009-018	Osc. Coil		1
		VYH4514-002	Shield Case		1
S2, 3, 4		QSP0239-115	Push SW. Ass'y	Tape Select NR	1
		VMJ3004-002	Jack Ass'y	PIN	1
		QMC9014-006	DIN Socket		1
S6-1, 6-2		QSP2210-061	Push Switch	DIN	1
S101, 201		QSSC201-101T	Slide Switch	R/P	1
		VMZ0005-001	Post Pin		1
		E43727-002	Wrapping Tab		8
	⚠	VKL5002-001	Heat Sink	X907	1
		LPSP3008ZS	Screw		1
		QMS6313-007	Mic. Jack Ass'y		2
		VMA4127-001	Shield Plate		1

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
X101, 201, 102, 202, 103, 203		2SC1344(E,F)	Si. Transistor	or 2SC1327(T,U)	6
X104, 204		2SK246(GR,BL)	FET	Toshiba	2
X902, 903		2SC2274(E,F)	Si. Transistor	or 2SC1318(Q,R)	2
X904		2SD471(LA,KA)	"	or 2SC1317(R,S)	1
X905		2SC945A(PA,KA)	"	or 2SC1684(R,S)	1
X906		2SA733A(P,K)	"	or 2SA564(R,S)	1
X907	⚠	2SC2209(Q,R)	"		1
IC101, 201		AN7362N	Integrated Circuit		2
IC901		AN6552	"		1
D902	⚠	RD20E(B3)	Zener Diode		1
D903, 904		DS135DKB3	Diode		2
D905, 906		"	"		2

Other P.W. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
[Power Transformer]					
		VMW3549-002	P.W. Board		1
	⚠	QSS2325-102	Slide Switch	V. Select KD-D2A/C/E/J	1
		" -102BS	"	" KD-D2B	1
	⚠	VTP54C3-011B	Power Transformer	KD-D2A/E	1
		" -011BBS	"	KD-D2B	1
		" -012B	"	KD-D2C/J	1
		VTP54U3-011B	"	KD-D2U	1
		E40130-001	Tab	KD-D2A/B/C/E/J	2
		E43727-002	"	"	3
		TAW000504-01	FG Connector	KD-D2U	2
		QMF51S2-R50	Fuse	" , F_1 F_2	2
		TAZ000331-02	Fuse Holder	"	4
		VND4003-023	Fuse Label	"	1
		VMA4129-001	Shield Plate	KD-D2J, J01	1
[Power Switch]					
		VMW1557-001E	P.W. Board		1
		QSP1110-305BS	Push Switch		1
		LPSP3006ZS	Screw		2
[LED]					
		VMW1557-001B	P.W. Board		1
LED 1	⚠	SLP-155B-01V	LED	REC.	1
LED 2	⚠	SLP-155B-01V	"	Power ON	1
[LED Meter]					
R191, 291		QRD141J-472S	C. Resistor	4.7 kΩ ¼ W	2
C191, 291		QET41HR-105N	E. Capacitor	1 μF 50 V	2
C990		QET41ER-336N	"	33 μF 25 V	1
	⚠	LT-1011	LED Module		1
[Phone Jack]					
		VMW1557-001C	P.W. Board		1
		QMS6302-112	Phone Jack Ass'y		1
[Hall IC]					
		VMW1557-001D	P.W. Board		1
		DN6835	Hall IC		1
D908		MA150	Diode		1

Packing

Positions of control and switch knobs at renew packing

Power switch	:	OFF
REC level control	:	MIN
Tape select	:	SA/CrO_2
NR SYSTEM	:	ANRS/DOLBY B
Mecha. operation buttons	:	OFF
Counter	:	000

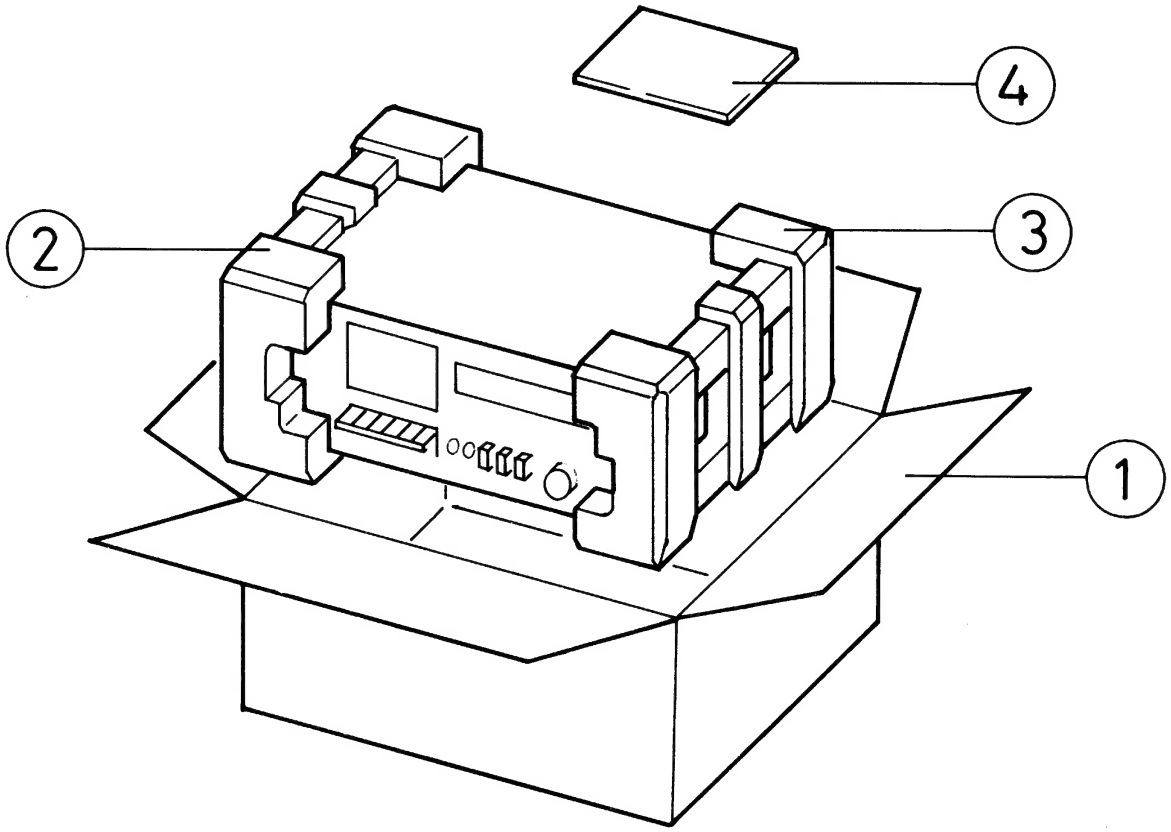


Fig. 20

Packing Material Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1–3	VDP2084-001A	Carton Ass'y	KD-D2A/B/E/J/U	1 set
1–3	VDP2084-003A	"	KD-D2C	1 set
1	VPD2084-J01	Carton	KD-D2A/B/E/J/U	1
1	VPD2084-J02	"	KD-D2C	1
2	VPH2146-001	Cushion (L)		1
3	VPH2147-001	" (R)		1
	QPGA060-06005	Envelope	for Set	1
4	AP4056B-077	"	for Instruction Book	1
	TKS000501-08	Sheet	for Set	1
	Q0414H	Vinyl Tie	for Power Cord, Provided Cord	1

Accessories

Parts No.	Parts Name	Remarks	Q'ty
VMP0002-00B	Pin Cord	KD-D2A/C/J/U	1
CN-201B	DIN Cord	KD-D2B/E	1
VYA4001-00A	Head Cleaning Stick		1
VNN0077-301	Instruction Book	KD-D2B/E	1
VNN0077-901	"	KD-D2A/C/J/U	1
BT20013C	Guarantee Certificate	KD-D2B	1
TJL000443-01	Seal	Made in Japan, KD-D2B	1
TLT052401-01	Warning Label	for Disconnection KD-D2A/B/E	1
QZL1002-003BS	Warning Label	for 2-pin Power Cord KD-D2B	1
VNC5004-001	Mark Sticker	DIN 45 500, KD-D2B/E	1
VND4016-001	Metal Sticker		1
BT20029B	Warranty Card	KD-D2A	1
BT20032B	"	KD-D2J/U for PX, EES	1
BT20025D	"	KD-D2C	1
TLT000505-01	UL/CSA Caution Label	KD-D2C/J	3
BT20042	Special Reply Card	KD-D2J/U	1
BT20044B	Safety Instruction	KD-D2J	1
E7795-1	EP Mark	KD-D2U	1
V04062-001	Siemens Plug	KD-D2U	1
VNC5311-101	Caution Card	KD-D2U for EES	1
VN04048-001	Jack Label		1

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